WASHINGTON STATE DEPARTMENT OF ECOLOGY

Southwest Regional Office
Toxics Cleanup Program
PO Box 47775
Olympia, WA 98504-7775
360-407-6240

TRANSMITTAL MEMO

Date: December 17, 2009

TO: Mr. William Carlson

RE: Snook Residence
SW0841

Subject: Explanation of Timeline

NOTE: **The determination date is the date Ecology approved the No Further Action status for the site. Final payment and EIM Data submission was then pending, and once received, the NFA letter was released.**

Ecology Determination date: December 17, 2009

Payment received date: January 12, 2010

EIM Data successfully uploaded: November 4, 2009

Ecology Determination letter mailed/sent: February 18, 2010

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

December 17, 2009

Mr. William Carlson
177 Bartell Road
Oakville, WA 98506

Re: No Further Action at the following Site:

- **Site Name:** Snook Residence
- **Site Address:** 177 Bartell Road, Oakville
- **Facility/Site No.:** 1122
- **VCP Project No.:** SW0841

Dear Mr. Carlson:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Snook Residence (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

NO. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:

- Metals into the Groundwater.

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Report, 6th Groundwater Sampling Event, Snook Farm, Oakville, Washington, dated August 15, 2009 by Insight Geologic, Inc.

2. Report, 5th Sampling Event, Groundwater Monitoring, Snook Farm, Oakville, Washington, dated May 15, 2009 by Insight Geologic, Inc.

3. Report, 4th Sampling Event, Groundwater Monitoring, Snook Farm, Oakville, Washington, dated March 4, 2009 by Insight Geologic, Inc.

4. Report, 3rd Quarter 2008, Groundwater Monitoring, Snook Farm, Oakville, Washington, dated November 10, 2008 by Insight Geologic, Inc.

5. Report, 2nd Quarter 2008, Groundwater Monitoring, Snook Farm, Oakville, Washington, dated June 26, 2008 by Insight Geologic, Inc.

6. Letter to Mr. William Carlson from Mr. Scott Rose (Ecology), RE: Partial Sufficiency and Further Action Determination, dated March 5, 2008.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **no further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

During a seven month period in 1987 and 1988, a clandestine methamphetamine laboratory was operated on Site within the house and garage. The laboratory was raided by the Drug Enforcement Agency in May 1988. Reportedly, waste chemicals were disposed on the ground surface in a 10 foot by 20 foot area to the south of the house. This area was noted as devoid of vegetation and stained black. Another waste pit that was about 20 feet by 40 feet was identified to the west of the house and driveway, and was also noted to be devoid of vegetation and showing soil discoloration. A private drinking water supply well serving the house is located on Site south of the house.

A subsequent investigation of the pit areas in May 1988 included sample analysis for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and lead. A water sample was also collected from the residential well. As one might expect as a result of this type of operation, several VOCs and SVOCs were present in the soil samples, including acetone, chloroform, toluene, 2-methylnaphthalene, and phenanthrene; however, all concentrations were below MTCA Method A and B cleanup levels. Lead was the only substance detected above MTCA cleanup levels; it was detected in a soil sample collected from the stained soil area south of the house at 468 milligrams per kilogram (mg/kg).

These areas were revisited and re-sampled in 2002, including the area of the lead detection. However, the lead detection in this area could not be duplicated. There were concentrations of arsenic, chromium, and lead in groundwater that exceeded MTCA cleanup levels. Permanent monitoring wells were installed in 2007 to characterize and monitor groundwater.

For more detail on the above-noted investigations, please refer to **Enclosure A.**

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

MTCA Method A cleanup levels for unrestricted land use were used at the Site.

Standard points of compliance have been established for the Site. The point of compliance for protection of groundwater will be established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance shall be established in the soils throughout the Site from the ground surface to 15 feet bgs.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

Cleanup actions conducted to date have included backfilling of the waste pits and monitored natural attenuation of the groundwater.

4. Cleanup.

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

No documentation is available regarding whether any of the material from the waste pits were excavated and disposed off Site prior to being restored and covered with grass. However, based on the sampling conducted within the pits, no contaminants were identified that exceeded MTCA cleanup levels, with the exception of lead. The area of the lead detection was re-sampled at a later date, and concentrations of lead in excess of MTCA cleanup levels could not be duplicated.

Between December 2007 and August 2009, quarterly groundwater monitoring was conducted at the four permanent wells on Site as well as from the property's drinking water supply well. Concentrations of arsenic and lead just above MTCA cleanup levels were identified in December 2007 and June 2008, respectively (see attached Table 2); however, since that time, four consecutive quarters of monitoring results have been collected indicating concentrations of contaminants below MTCA cleanup levels.

No contaminants have ever been detected in the on-Site drinking water supply well.

Listing of the Site

Based on this opinion, Ecology will initiate the process of removing the Site from our lists of hazardous waste sites, including:

- Hazardous Sites List.
- Confirmed and Suspected Contaminated Sites List.

That process includes public notice and opportunity to comment. Based on the comments received, Ecology will either remove the Site from the applicable lists or withdraw this opinion.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not:**

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW0841).

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at (360) 407-6347 or e-mail at sros461@ecy.wa.gov.

Sincerely,

Scott Rose, L.G.
Acting Unit Manager
SWRO Toxics Cleanup Program

SIR/ksc:Snook Residence Site NFA

Enclosures: A – Description and Diagrams of the Site

By certified mail: (7009 1410 0002 4420 0327)

cc: William Halbert – Insight Geologic, Inc.
Dolores Mitchell – Ecology (w/o enclosures)

Enclosure A

Description and Diagrams of the Site

Site Description

The Snook Residence Site is located at 177 Bartell Road in Oakville, Grays Harbor County, Washington. Surrounding property use consists of farms, rural residences, and undeveloped areas. The Site consists of a two-story house with associated outbuildings, including a carport, a garage, and a storage shed. During a seven month period in 1987 and 1988, a clandestine methamphetamine laboratory was operated on Site within the house and garage. The laboratory was raided by the Drug Enforcement Agency in May 1988. Reportedly, waste chemicals were disposed on the ground surface in a 10 foot by 20 foot area to the south of the house. This area was noted as devoid of vegetation and stained black. Another waste pit that was about 20 feet by 40 feet was identified to the west of the house and driveway, and was also noted to be devoid of vegetation and showing soil discoloration. A private drinking water supply well serving the house is located on Site south of the house.

The Chehalis River is located about ¾ mile east of the Site. Perched groundwater has seasonally been encountered on site between 9 and 12 feet below ground surface (bgs). However, permanent monitoring wells advanced on site encountered groundwater at 30 to 32 feet bgs. The direction of groundwater flow is to the east-northeast toward the Chehalis River.

Site History

Following the raid on site in May 1988, Ecology and Environment, Inc. (E&E) conducted a site investigation that consisted of excavating a series of test pits and the collection of soil samples for analysis for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and lead. A water sample was also collected from the residential well. Several VOCs and SVOCs were present in the soil samples, including acetone, chloroform, toluene, 2-methylnaphthalene, and phenanthrene, but at concentrations below Model Toxics Control Act (MTCA) Method A and B cleanup levels. Lead was detected in a soil sample collected from the stained soil area south of the house at 468 milligrams per kilogram (mg/kg), which exceeds the MTCA Method A cleanup level of 250 mg/kg.

Chloroform and 1,2-dichloropropane were detected in the drinking water sample but reportedly at concentrations below MTCA Method A or B cleanup levels. These contaminants were also present in the laboratory blank and were likely the result of laboratory contamination.

In February 2002, Stemen Environmental, Inc. collected nine soil samples and four grab groundwater samples from eight soil borings advanced on Site. The borings were located within the former stained soil areas, including the location of the elevated lead detected by E&E in 1988, as well as a location adjacent to the well house. A drinking water sample from the on-Site well was also collected. The samples were analyzed for VOCs and metals. No contaminants were detected in the soil samples above MTCA Method A or B cleanup levels.

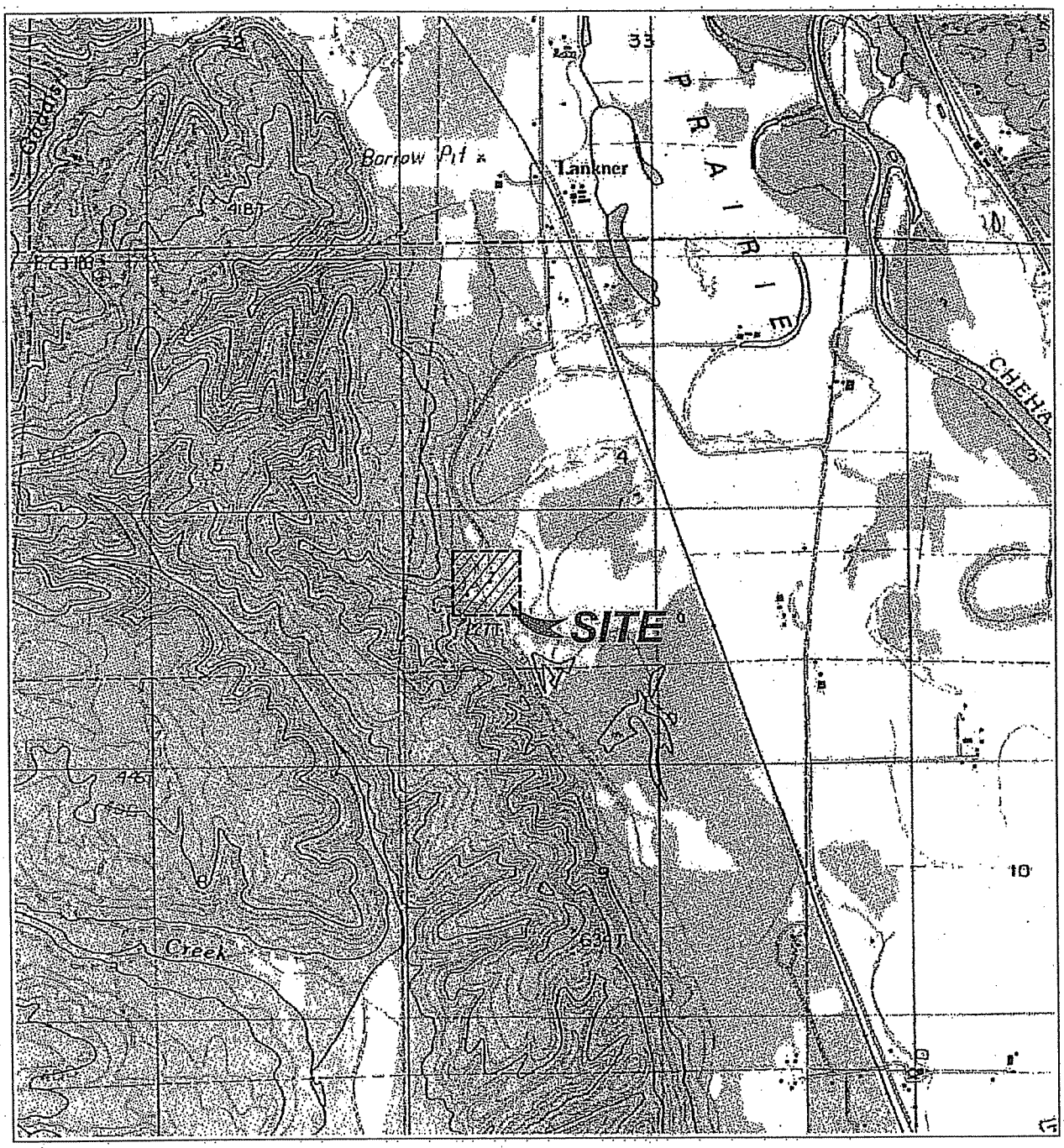
Arsenic, chromium, and lead were detected in two of the groundwater samples at concentrations above MTCA Method A cleanup levels. Arsenic was detected in samples WPA-W [71 micrograms per liter (µg/L)], 488-1-W (29 µg/L), and 482-W (7 µg/L) above the MTCA Method A cleanup level of 5 µg/L. Chromium was detected in samples WPA-W (280 µg/L) and 488-1-W (118 µg/L) above the MTCA Method A cleanup level of 50 µg/L. Lead was detected in samples WPA-W (92 µg/L) and 488-1-W (47

µg/L) above the MTCA Method A cleanup level of 15 µg/L. No other contaminants were detected in the groundwater samples above MTCA Method A or B cleanup levels.

In December 2007, Insight Geologic, Inc. collected soil and groundwater samples from eight soil borings (B-1 through B-8) advanced throughout the Site. A sample was also collected from the on-Site drinking water supply well. Four of the borings (B-3 through B-6) were completed as monitoring wells. The borings were advanced to depth ranging from 9 to 32 feet bgs; however, the monitoring wells were advanced to either 30 or 32 feet bgs. All samples were analyzed for VOCs by EPA Method 8260B and for lead, cadmium, chromium, arsenic, and mercury using EPA Series 7000 Methods.

Analytical results indicated that no contaminants were detected in the soil or drinking water samples above MTCA cleanup levels. Total arsenic was detected in groundwater in boring B-2 at 10.2 µg/L and monitoring well B-4 at 8.8 µg/L. These concentrations exceed the MTCA Method A cleanup level of 5 µg/L for arsenic. No other contaminants were detected in the groundwater samples above MTCA cleanup levels.

Subsequent quarterly rounds of groundwater monitoring was conducted at the four monitoring wells and the drinking water supply well between April 2008 and August 2009. Based on previous detections, samples were only analyzed for arsenic, lead, and chromium. Total lead was detected just above the cleanup level of 15 µg/L in the June 2008 sampling event (see attached Table 2). However, since that time, four consecutive quarters of monitoring results have been collected indicating concentrations of contaminants below MTCA cleanup levels.



Source: Maptech, Inc. (c) 1997

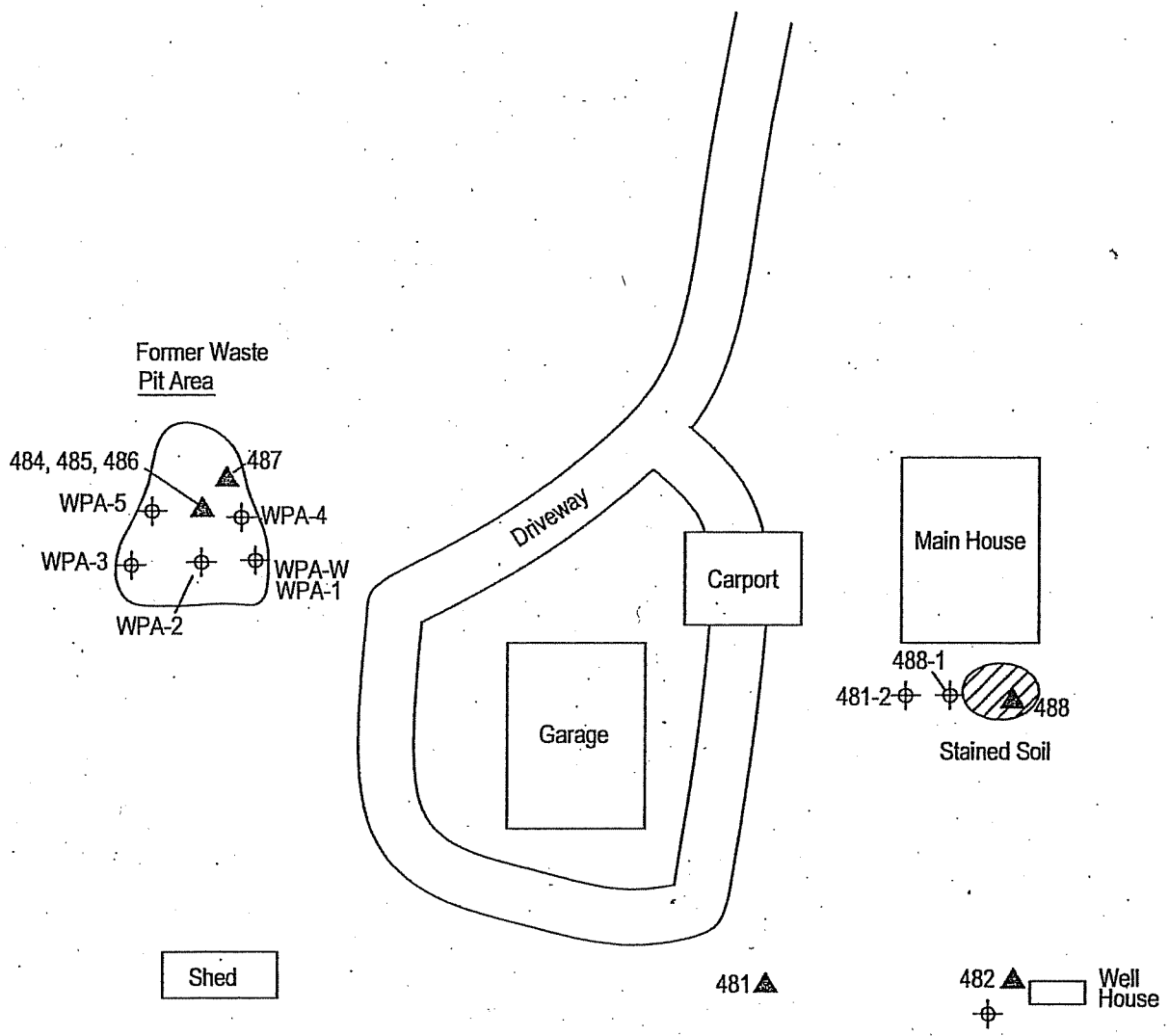
MALONE, WASHINGTON
7.5 MINUTE QUADRANGLE
Year created 1986, Revised 1993

SCALE: 1: 24000

SNOOK FARM
OAKVILLE, WASHINGTON

INSIGHT GEOLOGIC, INC.

Figure 1
Vicinity Map



INSIGHT GEOLOGIC, INC.

PREVIOUS SAMPLING LOCATIONS

FIGURE 2

Source: Grays Harbor County, Washington, GIS Mapping – 2005 Orthophoto

B-1
Boring Location

B-3
Monitoring Well Location

NORTH

Approximate Scale 1 inch = 140 feet

INSIGHT GEOLOGIC, INC.

SITE PLAN
BORING AND WELL LOCATION

FIGURE 2

TABLE 2

Summary of Laboratory Analyses - **WATER**

SNOOK FARM

Oakville, Washington

Sample/Well Number	Date Analyzed	ARSENIC		CHROMIUM		LEAD	
		Total	Dissolved	Total	Dissolved	Total	Dissolved
B3	12/20/2007	**4.4**	NA	<10	NA	<2.5	NA
	4/8/2008	<3	<3	<10	<10	<2.5	<2.5
	6/19/2008	<3	<3	<5	<5	**14.6**	<5
	10/17/2008	<3	<3	<10	<10	<2.5	<5
	2/20/2009	<3	NA	<10	NA	<2.5	NA
	5/5/2009	<3	NA	<10	NA	**6.9**	NA
	8/7/2009	<3	NA	<10	NA	<2.5	NA
B4	12/20/2007	**6.8**	NA	<10	NA	**5.0**	NA
	4/8/2008	<3	<3	<10	<10	<2.5	<2.5
	6/19/2008	<3	<3	<5	<5	**25.2**	<5
	10/17/2008	<3	<3	<10	<10	**6.0**	<5
	2/20/2009	<3	NA	<10	NA	<2.5	NA
	5/5/2009	<3	NA	<10	NA	**11.9**	NA
	8/7/2009	<3	NA	<10	NA	<2.5	NA
B5	12/20/2007	<3	NA	<10	NA	<2.5	NA
	4/8/2008	<3	<3	<10	<10	<2.5	<2.5
	6/19/2008	<3	<3	<5	<5	**7.3**	<5
	10/17/2008	<3	<3	<10	<10	**7.2**	<5
	2/20/2009	<3	NA	<10	NA	**3.1**	NA
	5/5/2009	<3	NA	<10	NA	**12.2**	NA
	8/7/2009	<3	NA	<10	NA	**9.6**	NA
B6	12/20/2007	<3	NA	<10	NA	<2.5	NA
	4/8/2008	<3	<3	<10	<10	<2.5	<2.5
	6/19/2008	<3	<3	<5	<5	**15.0**	**11.1**
	10/17/2008	<3	<3	<10	<10	**6.2**	<5
	2/20/2009	<3	NA	<10	NA	<2.5	NA
	5/5/2009	<3	NA	<10	NA	**14.3**	NA
	8/7/2009	<3	NA	<10	NA	**6.5**	NA
House Well	12/20/2007	<3	NA	<10	NA	<2.5	NA
	4/8/2008	<3	<3	<10	<10	<2.5	<2.5
	6/19/2008	<3	<3	<5	<5	<5	<5
	10/17/2008	<3	<3	<10	<10	<2.5	<5
	2/20/2009	<3	NA	<10	NA	<2.5	NA
	5/5/2009	<3	NA	<10	NA	<5	NA
	8/7/2009	<3	NA	<10	NA	<5	NA
MTCA Method A Cleanup Level		5	5	50	50	15	15

Notes:

Water sample collected during borehole drilling

Laboratory Analyses by Libby Environmental using EPA Method 7000 Series

Units in µg/l (micrograms/liter)

NA = Not Analyzed for Dissolved Metals

"<" indicates the analyte was not detected at the listed detection limit

Detected analytes are shown in **bold text**. Concentrations exceeding the respective MTCA Method A Cleanup Value are shown in red text and shaded.